

Claims:

1. A CMP abrasive comprising cerium oxide particles, a dispersant, an organic polymer having an atom or a structure capable of forming a hydrogen bond with a hydroxyl group present on a surface of a film to be polished and water.
2. The CMP abrasive according to Claim 1, wherein the organic polymer is a compound containing at least one atom having an unpaired electron in a molecular structure.
3. The CMP abrasive according to Claim 1 or 2, wherein said organic polymer is a compound containing either one or both of a nitrogen atom and an oxygen atom in a molecular structure.
4. The CMP abrasive according to any one of Claims 1 to 3, wherein said organic polymer is a compound having an adsorption ratio of 50% or more with respect to silicon oxide particles of a specific surface area of 50 m²/g dispersed in water of pH 6 to 8.
5. The CMP abrasive according to any one of Claims 1 to 4, wherein said organic polymer is a compound having an adsorption ratio of 40% or more with respect to silicon nitride particles of a specific surface area of 3.3 m²/g dispersed in water of pH 6 to 8.
6. The CMP abrasive according to any one of Claims 1 to 5, wherein the sedimentation speed of cerium oxide particles is 20 μm/s or less.
7. The CMP abrasive according to any one of Claims 1 to 6, wherein said organic polymer is polyvinyl pyrrolidone.
8. The CMP abrasive according to Claim 7, wherein said polyvinyl pyrrolidone has a weight average molecular weight of 5,000 to 2,000,000.
9. The CMP abrasive according to Claim 1, which comprises 0.01 to 2.0 parts by weight of dispersant and 0.001 to 1,000 parts by weight of an organic polymer based on the cerium oxide particle of 100 parts by weight, and the rest

[illegible]

comprising water, the concentration of the cerium oxide particles in the abrasive being 0.5 to 20% by weight.

10 A method for polishing a substrate comprising polishing by moving a substrate on which a film to be polished is formed and a polishing platen while pressing the substrate against the polishing platen and a polishing cloth and supplying said CMP abrasive according to any one of claims 1 to 9 between the film to be polished and the polishing cloth.

11. A method for manufacturing a semiconductor device comprising a step of polishing a film to be polished by moving a substrate on which the film to be polished is formed and a polishing platen while pressing the substrate against the polishing platen and a polishing cloth and supplying said CMP abrasive according to any one of Claims 1 to 9 between the film to be polished and the polishing cloth.

12. An additive for a CMP abrasive comprising an inorganic polymer having an atom or a structure capable of forming a hydrogen bond with a hydroxyl group present on a surface of a film to be polished, and water.

10010100 121001

Sub B2